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Study of the solvability of a boundary value problem for the system of nonlinear differential equations of the theory of shallow shells of the Timoshenko type

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Abstract

© 2016, Pleiades Publishing, Ltd.We study the solvability of a boundary value problem for a system of nonlinear second-order partial differential equations under given boundary conditions, which describes the equilibrium of elastic shallow shells with hinged edges in the framework of the Timoshenko shear model. The study method implies the reduction of the original system of equations to a single nonlinear differential equation whose solvability is proved with the use of the contraction mapping principle.

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